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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,321	07/23/2003	Peter Michael Edic	120521-2/YOD GERD:0052	7756
7590 06/30/2005			EXAMINER	
Patrick S. Yoder FLETCHER YODER P.O. Box 692289 Houston, TX 77269-2289			HO, ALLEN C	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No.	Applicant(s)	
	10/625,321	EDIC ET AL.	
	Examiner	Art Unit	
	Allen C. Ho	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-23,25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-23,25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-7, 9-15, 18-23, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 10, 18, and 16 recite a set of concurrently acquired phase data and the frequency content of the set of projection data. It is unclear what is meant by phase data and frequency content of the set of projection data. As Noted in MPEP § 2111, it is not proper to read limitations appearing in the specification into the claim when these limitations are not recited in the claim. Clarification in the claims is requested.

Claim 9 recite a routine for rotating a gantry comprising a distributed x-ray source slowly. It is unclear what is meant by slowly.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

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patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 17, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsieh (U. S. Patent No. 6,233,308 B1).

With regard to claim 1, Hsieh disclosed a method for acquiring a projection data set, comprising: rotating a gantry (12) comprising a distributed x-ray source (14) about a volume of interest, wherein a rotation period of the gantry is greater than eight seconds (ten seconds); emitting x-rays from a portion of the distributed x-ray source; and acquiring (18) a projection data set comprising a plurality of projections generated from the emitted x-rays (column 4, line 64 - column 5, line 8).

With regard to claim 17, Hsieh disclosed a CT image analysis system, comprising: a gantry (12) comprising a distributed x-ray source (14) configured to rotate about a volume of interest in eight or more seconds (column 4, line 64 - column 5, line 8); a detector (18) comprising a plurality of detector elements (20); a system controller (36) configured to control the x-ray source and to acquire a set of projection data during one or more rotations of the x-ray source about a dynamic object from one or more of the detector elements via a data acquisition system (32); and a computer system (34) configured to receive the set of projection data.

With regard to claim 25, Hsieh disclosed a CT image analysis system, comprising: means (30) for rotating a gantry (12) comprising a distributed x-ray source (14) about a volume of interest in eight or more second seconds (column 4, line 64 - column 5, line 8); means for emitting x-rays from a portion of the distributed x-ray source; and means (18) for acquiring a projection data set comprising a plurality of projections generated from the emitted x-rays.

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5. Claims 17 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Casey *et al.* (U. S. Patent No. 5,175,754).

With regard to claim 17, Casey *et al.* disclosed a CT image analysis system, comprising: a gantry (24) comprising a distributed x-ray source (12) configured to rotate about a volume of interest in eight or more seconds (column 1, line 61 - column 2, line 13); a detector (20) comprising a plurality of detector elements (22); a system controller (44) configured to control the x-ray source and to acquire a set of projection data during one or more rotations of the x-ray source about a dynamic object from one or more of the detector elements via a data acquisition system (34); and a computer system (46) configured to receive the set of projection data.

With regard to claim 25, Casey *et al.* disclosed a CT image analysis system, comprising: means (32) for rotating a gantry (24) comprising a distributed x-ray source (12) about a volume of interest in eight or more second seconds (column 1, line 61 - column 2, line 13); means for emitting x-rays from a portion of the distributed x-ray source; and means (20) for acquiring a projection data set comprising a plurality of projections generated from the emitted x-rays.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casey *et al.* (U. S. Patent No. 5,175,754).

With regard to claim 1, Casey *et al.* disclosed a method for acquiring a projection data set, comprising: rotating a gantry (24) comprising a distributed x-ray source (12) about a volume of interest, wherein a rotation period of the gantry is eight seconds (column 1, line 61 - column 2, line 13); emitting x-rays from a portion of the distributed x-ray source; and acquiring (20) a projection data set comprising a plurality of projections generated from the emitted x-rays.

Although Casey *et al.* failed to disclose a rotational period greater than eight seconds, Casey *et al.* taught that the number of projections acquired is determined by the rotational period of the gantry. Since the quality of the reconstructed image depends on the number of acquired projections, it is obvious that a longer rotational period would yield better images (column 1, lines 61-62).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ a gantry rotational period that is greater than eight seconds, since a person would be motivated to obtain a high quality image by acquiring more projections at a higher angular resolution.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (U. S. Patent No. 6,233,308 B1).

With regard to claim 9, Hsieh disclosed a method for acquiring a projection data set, comprising: rotating a gantry (12) comprising a distributed x-ray source (14) about a volume of interest, wherein a rotation period of the gantry is greater than eight seconds (ten seconds); emitting x-rays from a portion of the distributed x-ray source; and acquiring (18) a projection data set comprising a plurality of projections generated from the emitted x-rays (column 4, line 64 - column 5, line 8).

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However, Hsieh failed to disclose a computer program provided on one or more computer readable media.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the method in the form of a computer program, since a person would be motivated to implement the method on a CT system that is controlled by a computer.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Casey *et al.* (U. S. Patent No. 5,175,754).

With regard to claim 9, Casey *et al.* disclosed a method for acquiring a projection data set, comprising: rotating a gantry (24) comprising a distributed x-ray source (12) about a volume of interest, wherein a rotation period of the gantry is eight seconds; emitting x-rays from a portion of the distributed x-ray source; and acquiring (20) a projection data set comprising a plurality of projections generated from the emitted x-rays.

However, Casey *et al.* failed to disclose a computer program provided on one or more computer readable media.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the method in the form of a computer program, since a person would be motivated to implement the method on a CT system that is controlled by a computer.

Response to Arguments

10. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Edic *et al.* (U. S. Pub. No. 2004/0136490 A) disclosed a method and an apparatus for correcting motion in image reconstruction comprising slow gantry rotations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho
Primary Examiner
Art Unit 2882

27 June 2005